Table 4. Properties of polyamides prepared from p-aminoalkylphenylalkanecarboxylic acids

(a)	(b)	(c) (d)	(c) (e)	(f) (g)	(h)	(i)	(k)	(l)
(I)	$NH_2(CH_2)_2C_6H_4CH_2COOH$	290° / 305	90 / 30	(l)	279—283°	0.60 / 0.45	(p)	(n)
(II)	$NH_2(CH_2)_2C_6H_4(CH_2)_2COOH$	310 / 320	120 / 60+60••	(m)	375—382 (разл.)	2.42 / 3.17	(q)	(s)
(III)	$NH_2(CH_2)_2C_6H_4(CH_2)_3COOH$	200 / 300	1020 / 60	(n)	222—224	1.16 / 0.56	(p)	(r)
(IV)	$NH_2(CH_2)_2C_6H_4(CH_2)_4COOH$	265 / 290	120 / 60	(o)	273—275	2.10 / 0.92	(p)	(t)

Card 4/5

Key to Table 4: (a) Compound; (b) Formula of aminoacid; (c) Conditions of polycondensation; (d) Temperature; (e) Time (in minutes); (f) Properties of polyamides; (g) Character of the product; (h) Melting point; (i) Viscosity of the solution; (j) Solubility in aromatic alcohols; (k) Ability to form fibers from melt; (l) White, horny, stable; (m) White fused grains; (n) White powder/White, horny, strong; (o) White fused grains/ White, horny, strong; (p) Soluble; (q) Soluble only in concentrated sulfuric acid; (r) Strong fibers; (s) weak fibers; * for the polyamides of (I), (III), and (IV) the specific viscosity was determined for its 0.5% solution in tricresol; for (II) the relative viscosity was determined for a 1% solution of the polymer in concentrated sulfuric acid; ** heated under vacuum (2 mm).

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205820014-9"

27569
S/190/61/003/009/004/016
B110/B101

15.8080

AUTHORS: Bogdanov, M. N., Kudryavtsev, G. I., Mandrosova, F. M., Spirina, I. A., Ostromogol'skiy, D. Ye.

TITLE: Synthesis of some polyamides on the basis of α,ω-aminocarboxylic acids with benzene or cyclohexane rings in methylene chains

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 9, 1961, 1326-1331

TEXT: Polyamides from α,ω-aminocarboxylic acids with aromatic rings in the chain (p-aminomethyl-phenyl-alkane carboxylic (p-AMPA) and p-aminoethyl-phenyl-alkane carboxylic acids) are important for the production of thermostable fibers (400-500°C). The spinnability of polyamides (PA) and copolyamides (with ε-caprolactam (ε-CL)) based on p-aminomethylbenzoic acid (p-AMBA) and m-aminomethylbenzoic acid (m-AMBA) was tested. The following compounds were synthesized: 4-aminomethyl-cyclohexyl carboxylic acid (4-AMCA); 3-aminomethyl-cyclohexyl carboxylic acid (3-AMCA); 4-aminoethyl-cyclohexyl propionic acid (4-AECA); cis-4-aminocyclohexyl butyric acid

Synthesis of some polyamides ...

(cis-4-ACBA); trans-4-aminocyclohexyl butyric acid (trans-4-ACBA); and their polyamides. Pure p- and m-AMBA were prepared from the corresponding cyanobenzoic acids via the ethyl ester which can easily be purified by crystallization:
$p\text{-}CNC_6H_4COOH \rightarrow HCl\cdot NH_2CH_2CH_2C_6H_4COOC_2H_5 \rightarrow NH_2CH_2C_6H_4COOC_2H_5 \rightarrow$ p-AMBA. 4-AMCA, 3-AMCA, and 4-AECA were obtained by hydrogenation of the corresponding aromatic acids. Instead of Pt catalyst, rhodium black on Al_2O_3 which is more effective for the hydrogenation of aromatic was used according to A. A. Balandin, M. L. Khidekel' (Ref. 12: Dokl. AN SSSR, 123, 84, 1958). Cis- and trans-4-ACBA which were separated by means of hot acetone were synthesized as follows: $p\text{-}NH_2C_6H_4(CH_2)_3COOH$ $\rightarrow p\text{-}CH_3CONHC_6H_4(CH_2)_3COOH \rightarrow$ (cis + trans)-4-$CH_3CONHC_6H_{10}(CH_2)_3COOH$ $\rightarrow$ cis-4-ACBA + trans-4-ACBA. The following substances were synthesized for the first time: 4-AECA; cis- and trans-4-ACBA; the lactam of 3-AMCA; the hydrochlorides of the ethyl esters of p- and m-AMBA; cis- and trans-N-acetyl-4-ACBA and N-acetyl-p-aminophenyl butyric acid. The polymers of p- and m-AMBA are only slightly viscous, do not form fibers, and melt under decomposition above 300°C, as their "aromatic" carboxyl groups

Synthesis of some polyamides ...

undergo side reactions. p-AMPA and 4-AMCA in which benzene ring and COOH groups are separated by $-CH_2-$groups form polymers with higher molecular weight. The copolymers of p-AMBA with ε-CL, on the other hand, form strong fibers from the melt which can be cold-drawn. The p-AMBA carboxyl groups are assumed to form more heat-resistant amide groups with the amino groups of the ε-aminocaproic acid radicals. The copolycondensation products of m-AMBA with ε-CL and ω-aminoenanthic acid are little more viscous than m-AMBA homopolymers. Polycondensation is rendered difficult because of the instability of the carboxyl groups, and because of chain cleavage owing to cyclization of the end group as a result of a favorable mutual position of the amino groups and CO groups of the amide bonds. The high-molecular PA of 4-AMCA and trans-4-ACBA cannot be spun from the melt owing to decomposition. The PA of cis-4-ACBA was not pure, bubbly, colored and low-viscous. The high-molecular PA of 4-AECA which is stable even at 340°C forms strong fibers from the melt which can be cold-drawn. 3-AMCA forms, when heated, a non-polymerizable lactam. p-cyanobenzoic acid dissolved in 15% NH_3 was hydrogenated at room temperature and 15 atm pressure of H_2. The reaction product was dried, suspended in ethanol, and the

Synthesis of some polyamides ...

suspension was saturated with HCl. The hydrochloride of the ethyl ester of p-AMBA (melting point = 237-238°C) was obtained, which yielded p-AMBA after treatment with 28% NH_3. The hydrochloride of the ethyl ester of m-AMBA (melting point = 151-152.5°C) resulted from the hydrochloride of m-AMBA by treating it with ethanol and HCl. In the same way as with the p-compound, m-AMBA was obtained therefrom (melting point = 265-266°C). 4-AMCA was prepared from p-AMBA by means of hydrogenation in a sealed capillary (melting point = 239.5-240°C). The following data are given: 3-AMCA: melting point = 191.5-192.5°C; 4-AECA: melting point = 231-232°C; N-acetyl-p-aminophenyl butyric acid: melting point = 174-175°C; trans-N-acetyl-4-amino-cyclohexyl butyric acid: melting point = 198-199.5°C; cis-N-acetyl-4-amino-cyclohexyl butyric acid: melting point = 113-114°C. Trans-4-ACBA was obtained from the trans-N-acetyl-4-amino-cyclohexyl butyric acid by sulfuric acid hydrolysis at 150-155°C and separation in a column with ЭДЭ-10П (EDE-10P) anionite. Cis-4-AMBA (melting point = 226-228°C) was prepared from cis-N-acetyl-4-AMBA. The lactam (melting point = 152-153°C, well soluble in benzene and H_2O) was obtained from 3-AMCA by elimination of water. Polycondensation of the amino acids was

Synthesis of some polyamides ...

carried out in N_2 stream in test tubes. Copolymerization with ε-CL was first performed in a sealed ampul, then in N_2 stream. Fiber formation was examined on a special device according to M. B. Sigal et al. (Ref. 16: Khim. volokna, 1959, no. 5, 29). The authors thank B. V. Suvorov, Head of the laboratories of the Institut khimii AN KazSSR (Institute of Chemistry of the AS Kazakhskaya SSR) for providing p-cyanobenzoic acid. There are 2 tables and 16 references: 7 Soviet and 9 non-Soviet. The three most recent references to English-language publications read as follows: US Patent 2, 868, 769; M. Levine et al., J. Organ. Chem. 24, 115, 1959; US Patent 2, 910, 457.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennog volokna (All-Union Scientific Research Institute of Synthetic Fibers)

SUBMITTED: October 22, 1960

Card 5/5

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000205820014-9"

ACCESSION NR: AT4033982 S/0000/63/000/000/0037/0041

AUTHOR: Bogdanov, M. N.; Kalmy*kova, V. D.; Mandrosova, F. M.; Zhmayeva, I. V.; Okromchedlidze, N. P.; Sedy*kh, N. V.

TITLE: Synthesis and properties of fiber-forming polyalkyleneterephthalamides

SOURCE: Geterotsepny*ye vy*sokomolekulyarny*ye soyedineniya (Heterochain macromolecular compounds); sbornik statey. Moscow, Izd-vo "Nauka," 1963, 37-41

TOPIC TAGS: synthetic fiber, artificial silk, terephthalic acid, terephthalamide, polyalkylene terephthalamide, Alpha Omega diamine, Kapron

ABSTACT: A large number of polyamides based on terephthalic acid and unbranched α,ω-diamines with 8-16 methylene groups in the chain were synthesized and investigated with respect to their thermomechanical properties. The methods and conditions of synthesis are described. Effective additives were the aromatic hydroxy compounds, such as the isomers of hydroxyphenyl- and hydroxydiphenylmethane, which in an amount of 30-50% gave spinnable high-molecular-weight polyamides resistant to crystallization up to 320-340C. These are very suitable for spinning high-melting fibers. The limiting temperature of crystallization for polyamides from various terephthalates decreased to 280C or below. The synthesized polyamides were high-melting, strong, white substances, soluble only in concentrated

Card 1/2

ACCESSION NR: AT4033982

H_2SO_4. The thermal stability of the resulting fibers was tested by strength loss at 140C. A comparison of the thermodynamic curves of synthesized high-melting monofilaments and polycaproamide filaments showed that the differences in the relative variation of fiber length during heating are relatively small and the maximum difference in the temperature of incipient deformation does not exceed 40C. Fibers made from polyalkyleneterephthalamide, regardless of the much higher melting point, differ only slightly in thermal stability from Kapron fiber. The conditions of preparation and the properties (viscosity, melting points) of various polyalkyleneterephthalamides as well as the spinning conditions and fiber properties (strength, etc.) are tabulated. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: Vsesoyuzny*y nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute of Synthetic Fibers)

SUBMITTED: 15May62 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: OC, MT NO REF SOV: 005 OTHER: 014

Card 2/2

BOGDANOV, M.N.; SPIRINA, I.A.; ZHMAYEVA, I.V.; KALMYKOVA, V.D.

Synthesis and properties of some polyamides with reactive groups. Vysokom. soed. 5 no.12:1805-1808 D '63.
(MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

VOLOKHINA, A.V.; KUDRYAVTSEV, G.I.; RAYEVA, M.V.; BOGDANOV, M.N.; KALMYKOVA, V.D.; MANDROSOVA, F.M.; OKROMCHEDLIDZE, N.P.

Polycondensation of diamine salts of terephthalic and hexahydroterephthalic acids in the solid phase. Khim. volok. no.6:30-33 '64. (MIRA 18:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskustvennogo volokna.

L 10756-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4/Pa-4 ESD(t)/ASD(m)-3 RM

ACCESSION NR: AP4047204 S/0190/64/006/010/1795/1798

AUTHOR: Bogdanov, N. N.; Mandrosova, F. M. B

TITLE: Synthesis and properties of polyamides with aliphatic imino groups in the methylene chains

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 10, 1964, 1795-1798

TOPIC TAGS: polyamide, imino substituted polyamide, thermoreactive polyamide, polycondensation, aminohexylamine, iminodienanthic acid, dicarboxylic acid, diamine, synthetic fiber

ABSTRACT: The authors investigated the polycondensation of bis-(ω-aminohexyl)-amine (I), N,N'-bis-(ω-aminohexyl)-1,2-ethylene diamine (II) and ω,ω'-iminodienanthic acid (III) with dicarboxylic acids and diamines, and determined the properties of the thermoreactive polyamides obtained. Mixtures of the starting components were heated in sealed ampules to bind the basic part of the diamine, with the formation of a "forepolycondensate," then heated in a stream of nitrogen until the necessary molecular weight was achieved. At the beginning of the polycondensation, because of the presence of an imino group, a branching polymer was obtained, followed by cross linkage. The rate of this conversion was found to depend on the conditions of polycondensation. Polymers obtained under mild conditions were

Card 1/2

L 10756-65

ACCESSION NR: AP4047204

3

brittle, soluble in aromatic and aliphatic alcohols and in dilute HCl. Increases in temperature and time of heating produced a stronger and more elastic polymer. At a sufficiently high degree of polymerization, the polymers became unmeltable and insoluble. Such polymers could again be made soluble and meltable by heating in ampules in the presence of primary amines such as hexamethylenediamine. To obtain high molecular weight polymers, a 10-20% deficiency of diamine (calculated from the theoretical value) was used in the starting mixture, thus decreasing the number of free imino groups. In copolymerization with polyamide-forming monomers such as ε-caprolactam and the salts of diamines and dicarboxylic acids, this decrease in imino groups increases the thermostability and permits the production of fibers from melted polymers. The polymers were used to produce films which could contain a considerable number of active groups and could therefore be subjected to chemical modification. Other compounds used besides hexamethylenediamine were trans-hexahydroterephthalic acid, terephthalic acid, and the hexamethylenediamine salt of adipic acid. Orig. art. has: 2 tables and 3 chemical formulas.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute for Artificial Fibers)

SUBMITTED: 02Dec63 ENCL: 00 SUB CODE: MT, OC

Card 2/2 NO REF SOV: 003 OTHER: 004

L 44132-65 EPF(c)/EPR/EWT(m)/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL WW/RM
ACCESSION NR: AP5011256 UR/0190/65/007/004/0734/0736

AUTHOR: Bogdanov, M. N.; Khar'kov, S. N.; Spirina, I. A.; Leshchiner, A. U.; Plyashkevich, L. A.

TITLE: Synthesis and properties of polyaryl esters containing carboxyl groups

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 4, 1965, 734-746

TOPIC TAGS: polyaryl ester, carboxyl group, heat resistant polymer

ABSTRACT: New polyaryl esters containing free carboxyl groups have been prepared and some of their properties have been studied. The introduction of carboxyl groups was of interest as a means of imparting to the polymers solubility in alkalies and ion exchange properties, and of increasing heat resistance via the formation of salt-like cross-links. Polymeric and copolymeric polyaryl esters were prepared by interfacial polycondensation of trimesinyl dichloride (I) and/or terephthaloyl chloride (II) and 4,4'-dihydroxy-2"-carboxytriphenylmethane (III) and/or 2,2-bis(4-hydroxyphenyl)propane (IV) in sodium hydroxide solution at room temperature. The properties of the polyaryl esters

Card 1/2

L 44132-65

ACCESSION NR: AP5011256

were highly dependent on the monomer structures. All polyaryl esters from I were poorly soluble in dilute alkalies, but soluble in stronger alkalies with hydrolysis. Polymers from I and IV were also poorly soluble in cresol and tetrachloroethane; with the addition of II, solubility in cresol appeared. Polymers from II and III were soluble in dilute alkalies in the cold and in cresol. The polyaryl esters melted with decomposition in the range 240—320C. Orig. art. has: 2 formulas and 1 table. [SM]

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute of Synthetic Fibers)

SUBMITTED: 02Jul64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 002 OTHER: 003 ATD PRESS: 3256

Card 2/2

L 63036-65 EWT(m)/EWG(m) JAJ/RM/WG

ACCESSION NR: AP5013054 UR/0190/65/007/005/0813/0816
541.64+678.675

AUTHORS: Bogdanov, M. N.; Khar'kov, S. N.; Spirina, I. A.; Leshchiner, A. U.; Plyashkevich, L. A.

TITLE: Synthesis and properties of carboxyl-containing polyamides

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 5, 1965, 813-816

TOPIC TAGS: polymer, resin, polyamide, polyamide plastic, polycondensation

ABSTRACT: This report is an extension of the method for obtaining hetero-chain polymers with active groups in side chains to polyamides. The introduction of carboxyl groups was undertaken in the hope to increase the solubility and thermal stability of polyamides and to render them useful as ion exchangers. The synthesis consisted of interfacial polycondensation at room temperature of halides of dicarboxylic acids with aliphatic and aromatic diamines. The monomers used were: dichloroanhydride of trimesic acid, (X_1) N-(6-aminohexyl)-ω-aminoenantic acid (A), dicylorohydrate of N,N'-di-(6 carboxyhexyl)-n-phenylenediamine (H) dichloroanhydride of terphthalic acid (X_2), dichloroanhydride of sebacic acid (X_3), dichlorohydrate of m-phenylenediamine (M), dichlorohydrate of n-phenylenediamine

Card 1/2

L 63036-65

ACCESSION NR: AP5013054

(P), trans-n-diaminocyclohexane (T), piperazine (D), and 1,6-hexamethylenediamine (G). The polymers obtained are not thermostable and are soluble in alkalies. The polymer alkali metal salts exchange ions with a number of metal salts and mineral acids with the formation of insoluble carboxy[illegible]. Orig. art. has: 2 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatelskiy institut iskusstvennogo volokna (All-Union Scientific Research Institute of Synthetic [illegible])

SUBMITTED: 06Jul64 ENCL: 00

NR REF SOV: 004 OTHER: 000

Card 2/2

L 60264-65 EWP(j)/EWT(m)/T Pc-4 JAJ/RM

ACCESSION NR: AP5013061 UR/0190/65/007/005/0873/0877
678.01:53+678.675

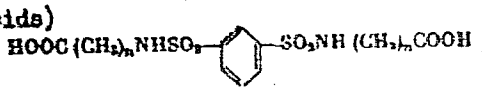
AUTHORS: Bogdanov, M. N.; Mandrosova, F. M.; Kravchenko, T. [illegible]

TITLE: Synthesis and properties of some fibrous polyamides with sulfamide groups

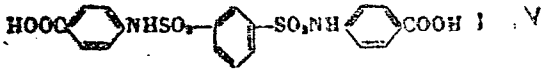
SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 5, 1965, 873-877

TOPIC TAGS: polymer, resin, polyamide plastic, polycondensation, synthetic fiber

ABSTRACT: The work was undertaken in order to determine the effect of the introduction of sulfamide groups on the properties of fibrous polyamides. The following dicarboxylic acid have been synthesized: m-benzene-disulfamide - N,N'-di-(alkanecarbonic acids)



where n = 4(I), 5(II) and 6(III); the acid (IV)



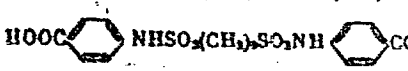
and the acids (V) and (VI)

Card 1/2

L 60264-65

ACCESSION NR: AP5013061

$$HOOC(CH_2)_5NHSO_2(CH_2)_4SO_2NH(CH_2)_5COOH. \quad (V)$$



(VI)

The condensation of diamine acid salts of I, II, and III with ε-caprolactam yielded polyamides suitable for preparation of fibers capable o chemical modification. Polycondensation of salts of IV and VI with 1,6 hexamethylenediamine, trans- 1,4-diaminecyclohexane and p-xylenediamine proceeded with difficulty and did not yield polymers with properties suitable for fiber production. Physical properties of a number of polyamide-polysulfamides hav been studied and are tabulated. Orig. art. has: 4 tables and 6 formulas.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut is usstvennogo volokna (All-Union Research Institute of Synthetic Fibers)

SUBMITTED: 20Jul64 ENCL: 00 SU CODE: OC

NO REF SOV: 001 OTHER: 003

Card 2/2

L 62832-65 EWT(m)/EWP(j)/T Pc-4 JAJ/5M

ACCESSION NR: AP5019043 UR/0286/65/000/012/0074/0074
678.675.002.2

AUTHOR: Bogdanov, M. N.; Kalmykova, V. D.; Okromchedlidze, N. P.; Zhmayeva, N. V.

TITLE: A method for producing polyamides. 15 Class 39, No. 172035 15

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 74

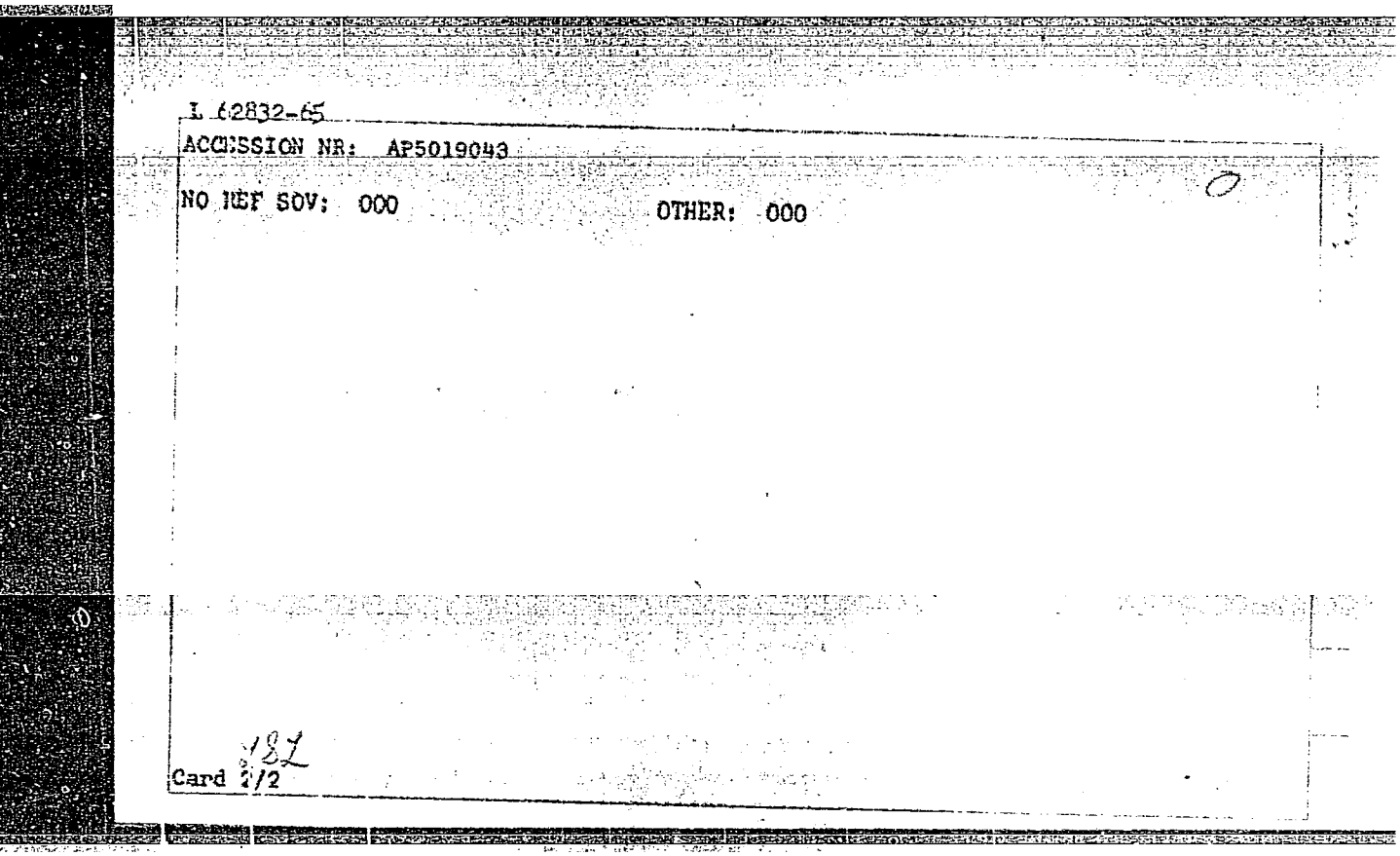
TOPIC TAGS: polyamide, polymer, polycondensation

ABSTRACT: This Author's Certificate introduces a method for producing polyamides by polycondensation of the starting monomers in the solid phase. The resulting preliminary polymer is then homogenized in an inert gas atmosphere by heating at a temperature below the melting point of the preliminary polymer. The quality of the product is improved by doing the heating under pressure.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (All-Union Scientific Research Institute of Synthetic Fibers)

SUBMITTED: 30Oct63 ENCL: 00 SUB CODE: MT, GC

Card 1/2



L 62832-65

ACCESSION NR: AP5019043

NO REF SOV: 000 OTHER: 000

Card 1/2

BOGDANOV, M.N.; KHAR'KOV, S.N.; SHARINA, I.A.; LEBEDEVA, A.N.; PLYASHKEVICH, L.A.

Synthesis and properties of polyamides with carboxyl groups. Vysokom. soed. 7 no.5:813-816 My '65. (MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

BOGDANOV, M.N.; MANDROSOVA, F.M.; KRAVCHENKO, T.V.

Synthesis and properties of some fiber-forming polyamides with sulfamide groups. Vysokom. soed. 7 no.5:873-877 My '65. (MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

L 00835-67 EWT(m)/EWP(j)/T LJP(c) RM/JW

ACC NR: AP6027776 (A) SOURCE CODE: UR/0190/66/008/008/1423/1427

AUTHOR: Bogdanov, M. N.; Leshchiner, A. U.; Plyashkevich, L. A. 33 B

ORG: All-Union Scientific Research Institute of Synthetic Fibers (Vsesoyuznyy nauchno-issledovatel'skiy institut iskustvennogo volokna)

TITLE: Introduction of terminal aromatic amino groups in poly- ε-caproamide using m-phenylenediamine and its hydrochloride

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 8, 1966, 1423-1427

TOPIC TAGS: caprolactame, chlorohydrate, polymerization

ABSTRACT: A process has been studied for hydrolytic ε-caprolactame polymerization in the presence of m-phenylenediamine and anhydrous or crystalline soda. Optimum correlations of these reagents are found which permit the maximum number of terminal aromatic aminogroups to be introduced in poly- ε-caproamide with a conservation of high molecular weight. It is shown that the addition of dimethylterephthalate in the presence of m-phenylenediamine permits the concen-

Card 1/2 UDC: 541.64+678.675

L 00835-67
ACC NR: AP6027776 O

tration of terminal aminogroups in the region of low molecular weights to be increased. Orig. art. has: 7 figures. [Based on authors' abstract] [NT]

SUB CODE: 07/ SUBM DATE: 09Jul65/ ORIG REF: 002/

hs

Card 2/2

L 40508-66 EWT(m)/T/EWP(t) IJP(c) WW/RM

ACC NR: AP6025616 SOURCE CODE: UR/0413/66/000/013/0075/0075

AUTHORS: Bogdanov, M. N.; Kalmykova, V. D.; Spirina, I. A. 56 B

ORG: none

TITLE: A method for improving the thermal stability of polyamides. Class 39, No. 183371

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 75

TOPIC TAGS: ~~polyamide~~, thermal stability, polyamide resin, synthetic fiber

ABSTRACT: This Author Certificate presents a method for improving the thermal stability of polyamides, e.g., polyamides containing aromatic or naphthenic rings. The method provides for the use of hydroxybiphenyl as the thermal stabilizer in the production of polyamide fibers by melt spinning. [04]

SUB CODE: 07/ SUBM DATE: 07Aug61 / ATD PRESS: 5059

Card 1/1 mcp UDC: 678.675'524'5.048.5

BOGDANOV, M. P.

"Winter Pastures of Kobystan and Basic Means for Their Rational Utilization and Improvement." Cand Biol Sci, Acad Sci Azerbaydzhan SSR, Inst of Botany, Baku, 1953. (RZhBiol, No 3, Oct 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (10)

So: Sum. No. 481, 5 May 55

BOGDANOV, M. P.

"Winter Pastures of Kobystan and Basic Methods for Their Rational Use and Improvement" Cand Biol Sci, Yerevan Zooveterinary Inst, 10 Mar 54. Dissertation (Kommunist Yerevan 27 Feb 54)

SO: SUM 186 19 Aug 1954

BOGDANOV, M.P.

Increasing the productivity of grass stands in winter pastures by application of mineral fertilizers. Dokl.AN Azerb.SSR 12:no.5: 353-355 '56. (MIRA 9:9)

1.Predstavleno akademikom AN Azerbaydzhanskoy SSR G.A.Aliyevym.
(Pastures and meadows)

ISAYEV, Yu.M.; BOGDANOV, M.P.

Sodding slopes of the Mingechaur Hydroelectric Power Station dam [in Azerbaijani with summary in Russian]. Dokl. AN Azerb. SSR 12 no.10:731-735 '56. (MIRA 10:1)
(Mingechaur Hydroelectric Power Station) (Dams)
(Soil binding)

PRILIPKO, L.I.; ALIYEV,R.A.; BOGDANOV,M.P.; GADZHIYEV, B.D.; MAILOV,A.I.

Outlook for the utilization of natural resources of the ditch reed and the giant reed in the paper and cellulose industries of Azerbaijan. Izv. AN Azerb. SSR. Ser.biol. i med.nauk no.7: 3-13 '61. (MIRA 16:7)

(AZERBAIJAN—REED(BOTANY)) (PAPER INDUSTRY)
(CELLULOSE INDUSTRY)

BOGDANOV, M.P.

Weeds of the Caspian and Khachmas Lowlands. Izv. AN Azerb. SSR. Ser. biol. nauk no.6:3-10 '64. (MIRA 18:6)

BOGDANOV, M.S.

Some results of geophysical works in the Krasnoyarsk Territory, 1961. Mat. po geol. i pol.iskop.Kras.kraia no.3:9-11 '62. (MIRA 17:2)

AUTHOR: Bogdanov, M. T. SOV/163-58-2-13/46

TITLE: Method for Determining the Strength of the Protective Layer Applied to Fused Molds (Metod opredeleniya prochnosti zashchitnogo pokrytiya, nanosimogo na vyplavlyayemyye modeli dlya lit'ya)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 2, pp. 84-86 (USSR)

ABSTRACT: The strength of the protective layers of marschellite and hydrated ethyl silicate was discussed. The experiments show that the strength of the protective layer in drying in the air increases with a prolongation of the drying period. After a drying for 48 hours the protective layers have a high strength. The strength of the protective layer as dependent on the temperature was investigated. Also the granular size of the molds is of importance to the strength of the protective layer. The highest strength of the protective layer is obtained when sand of a granular size of 50-70 mesh is used. The dependence of the strength of the protective layer on the number of layers was investigated. The absolute strength of the protective layer

Card 1/2

Method for Determining the Strength of the Protective Layer Applied to Fused Molds

increases with an increase in the number of the layers. The strength of the protective layer rapidly decreases in the hardening process after cooling, and considerable cracks in the layer occur. There are 4 figures.

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute)

SUBMITTED: October 1, 1957

AUTHORS: Nekhendzi, Yu. A., Bogdanov, M. T. SOV/163-58-3-13/49

TITLE: The Influence of Technological Factors on the Structure and Properties of Thin-Walled Casts of Temperature-Resistant Alloys (Vliyaniye nekotorykh tekhnologicheskikh faktorov na stroyeniye i svoystva tonkostennykh otlivok iz zharoprochnykh splavov)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 3, pp 71 - 75 (USSR)

ABSTRACT: The influence of some technological factors on the structure, density and mechanical properties of cast thin-walled platelets and modelled turbine blades of medium size was investigated. The platelets were produced of temperature resistant austenite steel types X1 and X15. X1 steel contains 19% chromium, 9% nickel, and 0,35% carbon; additionally it was alloyed with tungsten, molybdenum, niobium and titanium in quantities of up to 5% . X15 steel contains 13% chromium and 13% niobium; additionally it was alloyed with tungsten, molybdenum, niobium, vanadium and nitrogen in quantities of up to 7%. The structure of the X1 and X15 steels depends on the casting method

Card 1/3

employed. Of special influence is the casting method in casts with a wall thickness of more than 50-75 mm at a temperature of 800-900°. The density of the casts was investigated as dependent on the casting method and the amount of headmetal. Figure 1 gives the density of the platelets of steel X15 in dependence on the amount of head metal and the casting method. An increase of the head metal is of special importance for the cast sample. Furthermore the mechanical properties of the cast samples as dependent on the casting method employed and the amount of head metal were investigated. Figure 2 shows the change of the plastic properties of the samples; it has the same character as the density curves. When the amount of head-metal is increased the plastic properties of the samples increase as well, i.e. the strength of the cast samples depends on the amount of headmetal and the casting method employed. There are 3 figures and 1 table.

The Influence of Technological Factors on the Structure and Properties of Thin-Walled Casts of Temperature-Resistant Alloys SOV/163-58-3-13/49

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute)

SUBMITTED: October 10, 1957

Card 3/3

AUTHOR: Bogdanov, M.T. SOV-128-58-9-7/16

TITLE: The Influence of Technological Factors on the Resistance of the Coating During Casting on Fusible Models (Vliyaniye tekhnologicheskikh faktorov na prochnost' obolochki pri lit'ye po vyplavlyayemym modelyam)

PERIODICAL: Liteynoye proizvodstvo, 1958, Nr 9, pp 18-20 (USSR)

ABSTRACT: Coatings on fusible models were prepared by various methods, and the influence of these methods on the resistance of the coatings was investigated. The core of the molds was made from quartz sand K 50/70 with the addition of liquid glass with a specific gravity of 1.3 - 1.32. Diagrams of the press-molds for the production of the cores is given in Figures 3 and 4. The influence of the drying process on the resistance of the coatings is shown in Table 1. The best results are obtained by drying every layer for 16 hours in the air. A combined drying process with ammonia vapors has the same results, but reduces the time needed from 48 to 4.5 - 5 hours (Table 2). In Figure 5, the influence of the temperature is shown. The resistance of the coatings is directly proportional to the increase in temperature. An increase in the number of layers increases also the resistance of the

Card 1/2

The Influence of Technological Factors on the Resistance of the Coating During Casting on Fusible Models

coatings (Figure 7). The quality of the sand with which the layer is sprinkled influences the resistance of the coating. The best results are obtained by sand of type 50/70 and 70/100. Table 4 shows that tempering reduces the resistance of the coatings.
There are 3 photos, 4 tables, 2 diagrams, 3 graphs, and 3 Soviet references.

1. Ceramic coatings---Effectiveness 2. Ceramic coatings---Test results 3. Ceramic coatings---Temperature factors 4. Ceramic coatings---Heat treatment

AUTHOR: Bogdanov, M.T. SOV-128-58-9-10/16

TITLE: An Appliance for the Determination of the Gas-Tightness of a Ceramic Coating (Prisposobleniye dlya opredeleniya gazo-nepronitsayemosti keramicheskogo pokrytiya)

PERIODICAL: Liteynoye proizvodstvo, 1958, Nr 9, p 23 (USSR)

ABSTRACT: An apparatus has been developed (Figure 1) which can be used for testing the permeability to gases of various ceramic coatings of casting models. The specimen tested is fastened as shown in Figure 2. The gas-tightness can be calculated from the values measured.
There are 2 sets of diagrams.

1. Ceramic coatings--Effectiveness 2. Ceramic coatings--Testing equipment 3. Ceramic coatings--Properties

Card 1/1

NEKHENZI, Yu.A.; BOGDANOV, M.T.

Method of making specimens for the mechanical properties control of castings prepared by the melting-out process. Lit.proizv. no.2:2-6 F '60. (MIRA 13:5)
(Precision casting)

BOGDANOV, M.T.

PHASE I BOOK EXPLOITATION SOV/4548

Akademiya nauk SSSR. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali

Primeneniye vakuuma v metallurgii (Use of Vacuum in Metallurgy) Moscow, Izd-vo AN SSSR, 1960. 334 p. Errata slip inserted. 4,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A.A. Baykova. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali.

Resp. Ed.: A.M. Samarin, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: G.M. Makovskiy; Tech. Ed.: S.G. Markovich.

PURPOSE: This collection of articles is intended for technical personnel interested in recent studies and developments of vacuum steelmaking practice and equipment.

COVERAGE: The book contains information on steel melting in vacuum induction furnaces, and vacuum arc furnaces, reduction processes in vacuum, and degassing of steel and alloys. The functioning of apparatus and equipment, especially vacuum furnaces and vacuum booster pumps is also analyzed. Personalities are mentioned in connection with some of the articles and will appear in the Table of Contents. Three articles have been translated from English. Some of the

Card 4/9

BOGDANOV, M.T.

Forming the properties thin-walled, heat-resistant alloy castings. Lit.proizv. no.7:29-33 Jl '62. (MIRA 16:2)
(Heat-resistant alloys) (Founding)

ACCESSION NR: AT4037532 S/2563/63/000/224/0153/0176

AUTHOR: Bogdanov, M.T.

TITLE: Sample castings for testing the mechanical properties of heat resistant metals

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 224, 1963. Liteyny*-ye svoystva zharoprochny*kh splavov (Castability of heat-resistant alloys), 153-176

TOPIC TAGS: castability, heat resistant alloy, iron based alloy, nickel based alloy, carbon steel, high alloy steel, manganese steel, alloy EI395, alloy EI612, alloy EI618, alloy EI787, alloy EI827, alloy TsZh6, steel 19/9, steel 15/35, steel 30KhSGL, impact ductility, tensile strength, creep test, casting mold design, top casting, bottom casting, film forming alloy, vertical mold, horizontal mold, test sample surface

ABSTRACT: About 10,000 samples were precision-cast from low-alloy carbon steel (e.g. 30KhSGL), high alloy steel (e.g. 19/9 and 15/35, standing for % Cr and Ni, respectively), high-alloy manganese steel (20% Mn), and Fe- or Ni-based

Card 1/8

ACCESSION NR: AT4037532

heat resistant alloys (e.g. EI395, EI612, etc.), to determine the optimal techniques of casting samples by means of mechanical tests. It was established that high quality samples depend strongly on good quality molds, adequate superheating of the metal during pouring and the absence of cracks, ash residue or crumbling edges on the mold walls. Specific charging methods and mold shapes are recommended for small samples of carbon steel, manganese steel, steel 19/9 and 15/35 (see Fig. 1a in the Enclosure), or the film forming Fe- or Ni-based steels (see Fig. 1b or 1c - latter for serial casting - in the Enclosure). Samples for impact ductility tests from steels or alloys not subject to film forming can be cast by any method. A mold (see Fig. 2 in the Enclosure) is recommended for serial casting of such samples. Large samples for creep tests of alloys, forming films or free of them, should be cast in a vertical mold (see Fig. 3 in the Enclosure). It was established that samples for tensile tests can be used with either polished or rough surfaces. Orig. art. has: 22 figures and 2 tables.

ASSOCIATION: Leningradskiy politekhnickeskiy institut im. M.I. Kalinina (Leningrad Polytechnical Institute)

Card 2/8

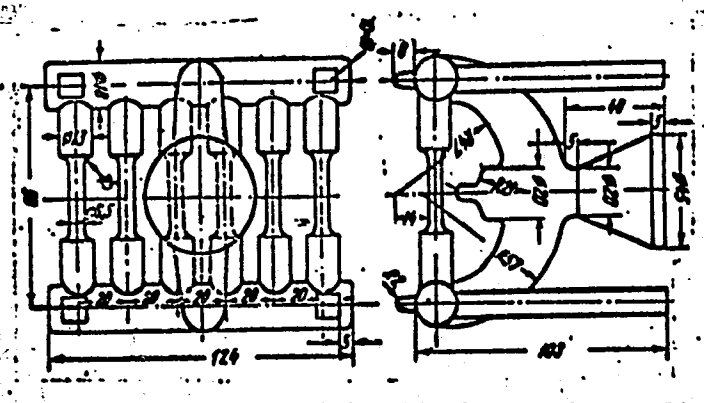
ACCESSION NR: AT4037532

SUBMITTED: 00 DATE ACQ: 04Jun64 ENCL: 05

SUB CODE: MM NO REF SOV: 011 OTHER: 001

Card 3/8

ACCESSION NR: AT4037532

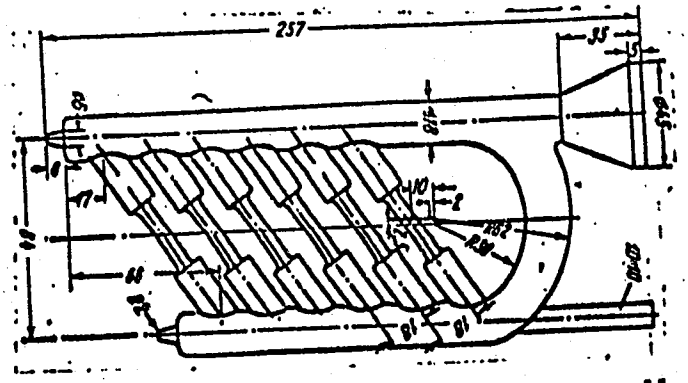


ENCLOSURE: 01

Fig. 1a Recommended molds for casting small samples for tensile or impact ductility tests

Card 4/8

ACCESSION NR: AT4037532



ENCLOSURE: 02

Fig. 1b Recommended molds for casting small samples for tensile or impact ductility tests

Card 5/8

ACCESSION NR: AT4037532

ENCLOSURE: 03

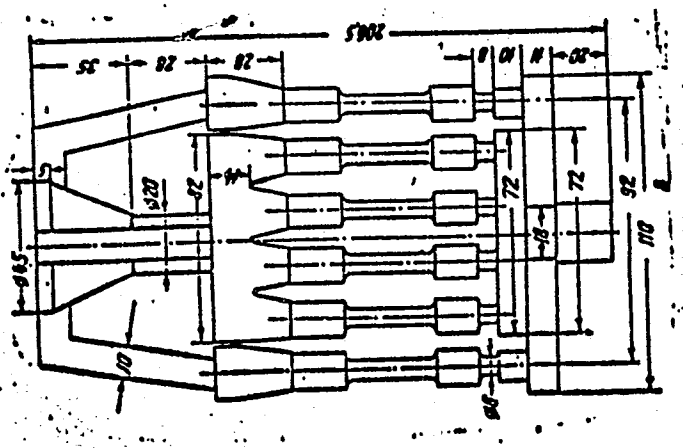


Fig. 1c Recommended molds for casting small samples for tensile or impact ductility tests

Card 6/8

ACCESSION NR: AT4037532 ENCLOSURE: 04

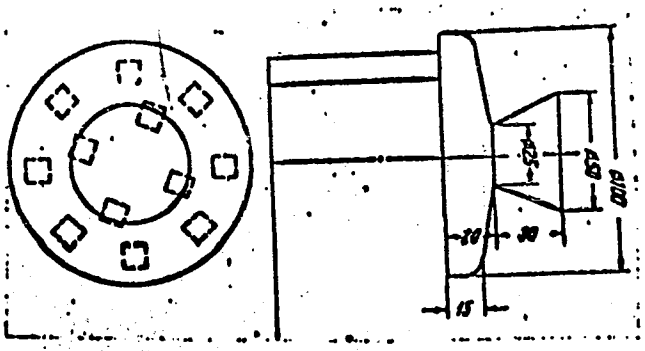


Fig. 2 Mold for top casting of samples for impact ductility tests

Card 7/8

ACCESSION NR: AT4037532.

ENCLOSURE: 05

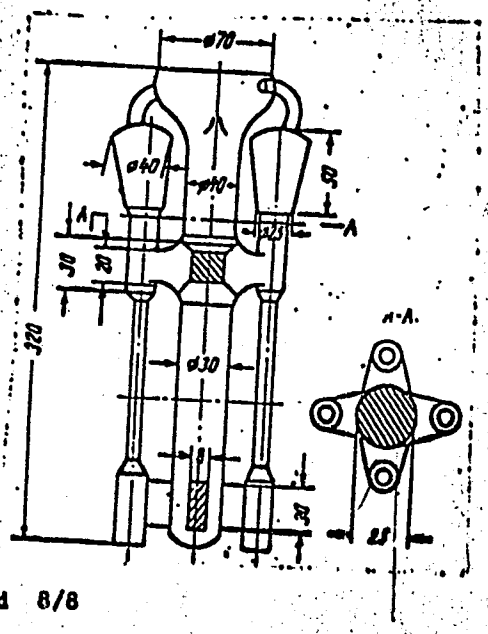


Fig. 3 Mold for combined top and bottom casting of large samples.

Card 8/8

ACCESSION NR: AT4037533 S/2563/63/000/224/0177/0194

AUTHOR: Bogdanov, M.T.

TITLE: Structure and properties of thin-walled castings from heat resistant alloys

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 224, 1963. Liteyny*ye svoystva zharoprochny*kh splavov (Castability of heat-resistant alloys), 177-194

TOPIC TAGS: castability, heat resistant alloy, iron based alloy, nickel based alloy, Nichrome alloy, austenitic steel, high alloy steel, alloy No. 6, alloy Khl, thin walled casting, gas turbine blade, casting technique, cast metal density, mold charging technique, preheated mold, molten charge temperature, impact ductility, tensile strength, ceramic mold, cast iron mold, casting structure, relative elongation threshold, crystal growth property

ABSTRACT: Samples of austenitic steel Khl and heat resistant alloy No. 6 (see Nekhendzi, Yu. A., pp. 9-23, this same book, for compositions) were tested to study the casting of gas turbine blades from heat resistant alloys in relation to casting technique (metal temperature, mold material and preheating, charging method, casting position in the mold) and the

Card 1/3

ACCESSION NR: AT4037533

effects of structure, density, gas content and surface films on mechanical properties of castings at normal and high temperatures. Khl was poured at 75, 160 or 250 C above liquidus, No. 6 at 100, 200 or 300 C above. Ceramic molds for thin walled samples (ø 6 mm for tensile tests, cross section 11x11 mm for impact ductility tests) were preheated to 20, 400 or 800 C, those for bulkier samples (II) to 20 or 800 C. The latter were occasionally cast in cast-iron molds. Molds were either top cast or bottom cast, the metal fed mostly from one side or from both sides. Crystal size for Khl varied from 0.2 (mold temp. 20C, superheating 75C) to 19.6 mm^2 (at 800 and 250C, respectively) for thin walled samples (I) and from 3.0 to 128.0 mm^2 (cast-iron mold at 60C at any superheating temperature to ceramic mold at 800C and superheating above 160C respectively) for II, positive density variations were 0.1402 and 0.0543 g/cm^3 respectively. For No. 6, the range was 0.2 (20C and 100C) to 3.5 mm^2 (300 and 800C) for I and 1.0 (cast iron mold as above) to 6.5 mm^2 (300 and 800C) for II. Here the density varied by +0.1099 and +0.0480 g/cm^3, respectively. Hydrogen content variation was about 100%. It is concluded that high quality, dense I castings can be obtained from austenitic steel only when the metal is adequately superheated (150 to 250C) and the mold is preheated to at least 400C. Superheating should range from 200 to 300C for Ni-based alloys. Conversely, density increased for II castings as rate of cooling

Card 2/3

ACCESSION NR: AT4037533

increased (for both types of material), except that it dropped somewhat for cast-iron molds. Relative elongation of I samples (Khl) varied from 10 to 37% for densities of 7.77 to 7.84 g/cm^3; equally noticeable variations were absent for No. 6. Structure, rather than density, is significant for the plastic properties in II samples. Impact ductility depends more on structure and less on density for I samples of Khl (hence charging procedure was of less consequence); its variation was more parallel to the change in plastic properties for I samples of No. 6. Analysis of tensile tests (35 kg/mm^2, 650C) indicates good coincidence with the density variations for both sample types and materials, endurance improving with an increase in density. Orig. art. has: 14 graphs.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina (Leningrad Polytechnical Institute)

SUBMITTED: 00 DATE ACQ: 04Jun64 ENCL: 00

SUB CODE: MM NO REF SOV: 009 OTHER: 000

Card 3/3

ACC NR: AP6036710 SOURCE CODE: UR/0136/66/000/011/0081/0085

AUTHOR: Nosal', V. V.; Bogdanov, N. T.; Chuvashov, Yu. N.

ORG: none

TITLE: Experimental determination of stresses in a KhPT 12-20 triplex cold-rolling mill

SOURCE: Tsvetnyye metally, no. 11, 1966, 81-85

TOPIC TAGS: cold-rolling mill, ~~eight-channel amplifier~~, metal tube, stress analysis, torsion stress / KhPT 12-20 triplex cold-rolling mill, N-700 oscillograph, N-102 oscillograph, 8-ANCh-7M eight-channel amplifier

ABSTRACT: This mill is designed for the cold rolling of tubes from nonferrous metals and alloys. It can roll three tubes at a time, and it is powered by a 125-kw main-drive motor. The tubes rolled have an outside diameter of 12-20 mm and a wall thickness of 0.4-1 mm. The stresses in this mill were experimentally determined as follows: the vertical rolling stress was was measured with the aid of dynamometers inserted between the upper roll and the roll-stand frame; the axial stresses in the billets were measured by means of dynamometers attached to the feed assembly, and the stresses in the mandrel rods, by means of pickups affixed

Card 1/3 UDC: 669.2/.8:621.771

ACC NR: AP6036710

directly to the rod; the tensile and compressive stresses in the connecting rods of the drive mechanism were measured with the aid of pickups attached to the lateral surfaces of the rods. In addition, the torque on the high-RPM shaft of the main-drive reducing gear as well as on the shafts leading to the feed and rotation mechanisms was also measured. The readings of all the pickups were recorded by means of N-700 and N-102 oscillographs with 8-ANCh-7M eight-channel amplifiers. Findings: the axial stresses in each of the three simultaneously rolled billets and the stresses in each of the three mandrel rods differ from each other by a factor of 1.1-1.5; this is attributable to the effect of many factors, such as lubrication of the internal surface of the tube, the quality of the mandrel surface, the distribution of friction forces in the area of deformation, etc. The stresses in the connecting rods of the drive mechanism increase 2.5 times if the number of passages of the roll stand is increased to 100 from 65 per minute, and 4.5 times if the number of these passages is increased to 150 per minute. The increase in the torque of the high-speed shaft of the main-drive reducing gear as a function of increase in the number of roll-stand passages was found to follow a similar pattern. In both cases the employment of a counterweight-type device (Fig. 1) markedly reduced the increase in stresses. On the whole, the KhPT 12-20 pilot-industrial triplex rolling mill proved to perform satisfactorily as an installation for the simultaneous rolling of three nonferrous-metal and -alloy tubes; the accuracy of the outside diameter of the finished tubes is assured by

Card 2/3

ACC NR: AP6036710

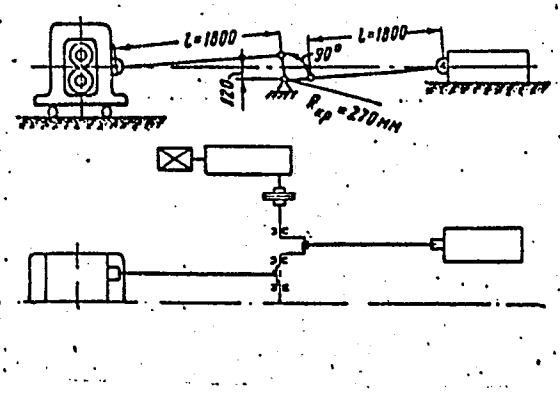


Fig. 1. Diagram of a counterweight-type device

sufficient ridigity of the roll, and the wall thickness, by adjustment of the mandrel position. Orig. art. has: 4 figures, 2 tables.

SUB CODE: 11, 13/ SUBM DATE: none

Card 3/3

BOGDANOV, M.V.

Operation of the tie tamper in a division. Put' i put. khoz. 8 no.1:24-25 '64. (MIRA 17:2)

1. Zamestitel' nachal'nika Kirovskoy distantsii Gor'kovskoy dorogi.

L 21426-66 EWT(m)/EWP(j)/T RM/ WW

ACC NR: AP6010429 SOURCE CODE: UR/0020/66/167/002/0384/0385

AUTHOR: Kargin, V. A. (Academician); Berestneva, Z. Ya.; Bogdanov, M. Ye.; Efendiyev, A.

ORG: Physicochemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut)

TITLE: The problem of ordering in amorphous polymers

SOURCE: AN SSSR. Doklady, v. 167, no. 2, 1966, 384-385

TOPIC TAGS: amorphous copolymer, ordered structure, supramolecular structure, morphological form, globule, fibril

ABSTRACT: A study has been made of the structure of the allylbarbituric acid-acrylic acid copolymer prepared by radical copolymerization. The copolymer is amorphous and noncrystallizing by virtue of its irregular structure. However, from dilute aqueous solutions (10^{-1}—10^{-2} g/100 ml; pH, 1.0) the copolymer was shown to form large ordered structures. These structures are highly oriented, exhibit marked optical anisotropy, and consist both of globular and fibrillar formations. Orig. art. has: 3 figures. [BO]

SUB CODE: 07, 11/ SUBM DATE: 02Jun65/ ORIG REF: 003/ ATD PRESS: 4221

Card 1/1 UDC: 539.213

BOGDANOV, N.

My recollections. Stroitel' 8 no.5:7 My '62. (MIRA 15:7)
(Construction industry--Periodicals)

BOGDANOV, N.

Emergency switch of a scooter. Za rul. 17 no.8:27 Ag '59.
(MIRA 12:12)

(Outboard motorboats)

LUCHANSKIY, Iosif Aleksandrovich; YANOVSKIY, Aleksandr Aleksandrovich; KASTORSKIY, V., redaktor; BOGDANOV, N., redaktor; ZHURAVLEV, A., tekhnicheskiy redaktor.

[Functioning of an airplane propeller] Rabota vozdushnogo vinta. Moskva, Izd-vo Dosaaf, 1954. 141 p. [Microfilm] (MLRA 8:2)
(Propellers, Aerial)

BOGDANOV, N.

13065

USSR/Loading Facilities 4602.0331 Dec 1947
Personnel Efficiency 4602.0323

"Increasing the Technical Norms for Loading Railroad Cars with Fuel Freight," N. Bogdanov, Candidate in Mechanical Sciences; B. Pronin, Engineer Major of Traffic; V. Pykhov, Candidate in Mechanical Sciences, 6 pp

"Zh-d Transport" No 12

Discloses percentage of load-lifting capacity of enclosed cars, hopper cars, half-cars and gondolas, covered cars, hopper cars, half-cars and gondolas, double-axis and quadruple-axis platforms. Complete text of Decree No 698/Ts of Ministry of Transportation shows new technical norms for loading rolling

13065

USSR/Loading Facilities 4602.0331 (Cont'd) Dec 1947

stock beginning 3 Nov 1947. Decree gives loading norms for varieties of coal from Donbass, Kuzbass, Pechora, Karaganda Basin and Moscow area and also gives established load-lifting capacity of railroad cars. Authors suggest seven measures to improve loading. Table shows weight of eight types of firewood.

13065

BOGDANOV, N.

PA 26/49T103

USSR/Radio Transmitters Jan 49
Vacuum Tubes

"The 6E5 Tube in a Transmitter," N. Bogdanov, 1 p

"Radio" No 1

Diagram shows how a 6E5 may be used as a tuning indicator for the primary and final stages of transmitters.

26/49T103

BOGDANOV, N.

Stone, Cast

Artificial carbonization. Nauka i zhizn' 20, No. 2, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. UNCLASSIFIED.

BOGDANOV, N.

Fire equipment in Czechoslovakia. Pozh.delo 3 no.8:28-30 Ag '57.
(MLRA 10:8)
(Czechoslovakia--Fire departments--Equipment and supplies)

BOGDANOV, N., dotsent; RABINOVICH, S.; KARUNA, Ye.

Assembly of the precast elements of the Krivoy Rog Central Ore Dressing Combine. Prom. stroi. i inzh. soor. 4 no.3:26-31 My-Je '62. (MIRA 15:7)

1. Dnepropetrovskiy inzhenerno-stroitel'nyy institut (for Bogdanov). 2. Glavnyy inzhener tresta "Dneprostal'konstruktsiya" (for Rabinovich).

(Krivoy Rog--Ore dressing)
(Precast concrete construction)

BOGDANOV, N.; KOLDOMASOV, Yu.

Improving the efficiency of the traffic flow of fuel. Vop. ekon. no.8:47-55 Ag '62. (MIRA 15:8)
(Fuel—Transportation)

BOGDANOV, N.A., kand. vet. nauk.

Useful book about progressive practice ("Shunga veterinary sector" by N.V. Zaitsev. Reviewed by N.A. Bogdanov). Veterinariia 34 no.2: 88-89 F '57. (MLRA 10:11)
(Shunga (Kostroma Province)--Veterinary medicine)
(Zaitsev, N.V.)

BOGDANOV, N.A.

Stratigraphic plan of pre-Cambrian sediments in the Dzhagdy and Tukuringra Ranges. Sov. geol. 1 no.4:165-169 Ap '58. (MIRA 11:6)

1.Geologicheskiy institut AN SSSR.
(Dzhagdy Range--Geology, Stratigraphic)
(Tukuringra Range--Geology, Stratigraphic)

3(5) SOV/2o-127-2-47/7o

AUTHOR: Bogdanov, N. A.

TITLE: The Stratigraphy of Upper Ordovician and Lower Silurian of the Southern Part of the Tas-Khayakhtakh Chain (Cherskiy Mountain Range)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol. 127, Nr 2, pp 4o2 - 4o4 (USSR)

ABSTRACT: The chain mentioned in the title forms the north-western part of the immense mountain system of the Cherskiy range. It is the western border of the Zyryanskaya depression and the border elevation of the Kolymskiy central massif (Ref 2) the main part of which consists of Lower- and Middle Paleozoic rocks. After a survey of the history of research of the Paleozoic sediments of the mentioned massif (Ref 1, M. N. Chugayeva; determinations of the graptolites by A. M. Obut) the author gives a schematic cross section of the Ordovician- and Lower Silurian rocks in the western wing of the Uchugeyskaya anticline (exposure in the valley of the Uchugey-Kuryakh River). Argillaceous schists and limestones of the Kharkindzhinskaya suite rest here quite con-

Card 1/3

cordantly upon a thick limestone mass and dolomitized limestones of Middle Ordovician (beginning with the lower strata): 1) Black and silvery-black calciferous-argillaceous and argillaceous schists, 10-30 cm thick; 2) alternations of grey and dark-grey, almost black argillaceous and arenaceous-argillaceous schist beds, 50 m thick; 3) Grey and yellowish-grey arenaceous limestones consisting of medium-sized plates, 100 m thick. The total thickness of the suite amounts to 180 m. The Omulevskaya suite with 3 stratigraphic units: 80, 50, 70 m thick respectively rests concordantly upon it. The total thickness of the suite amounts to 200 m. The mentioned sediments contain a considerable quantity of graptolites from which the following conclusions to the age of the containing rocks may be drawn: the lower part of the Kharkindzhinskaya suite has an Upper Llandeilo age (zone Dilograptus multidens). The middle part of the cross section is according to A. M. Obut to be ascribed to the Lower Caradoc. Rather badly conserved graptolites are found in the lowest part of the Omulevskaya suite which characterize this part as the upper part of Lower Llandovery. The middle part is assumed to correspond to Upper Llandovery, whereas the upper

part of the suite might correspond to Upper Wenlok. Traces of interruptions of the sedimentation could be found neither between Ordovician and Silurian, nor in Upper Wenlok (which is the first of reference 1 in the Omulevskiye mountains). The cross section is as a whole as well as in details correlated to those of formations of the same age of this region (Fig 1). This permits a conclusion to very similar tectonic conditions within the range of the entire south-western part of the Kolymskiy central massif in the course of Upper Ordovician and Lower Silurian. There are 1 figure and 2 Soviet references.

ASSOCIATION: Geologicheskiy institut Akademii nauk SSSR (Geological Institute of the Academy of Sciences, USSR)

PRESENTED: March 1o, 1959, by N. S. Shatskiy, Academician

SUBMITTED: February 24, 1959

BOGDANOV, N.A.

Structure of the deep fractured zone in the southern slopes of the Turkuringra and Dzhagdy Ranges. Biul.MOIP.Otd.geol. 35 no.2:52-61 Mr-Ap '60. (MIRA 14:4)
(Tukuringra Range--Geology, Structural)
(Dzhagdy Range--Geology, Structural)

BOGDANOV, N.A.; CHURAYEVA, M.N.

Paleozoic sediments in the Omulevka Mountains. Izv. AN SSSR. Ser. geol. 25 no.5:24-30 My '60. (MIRA 13:10)

1. Geologicheskiy institut AN SSSR, Moskva.
(Omulevka Mountains--Sediments (Geology))

BOGDANOV, N.A.

Stratigraphy and tectonics of the Tas-Khayakhtakh Range. Izv. AN SSSR. Ser.geol. 26 no.9:61-76 S '61. (MIRA 14:8)

1. Geologicheskiy institut AN SSSR, Moskva.
(Tas-Khayakhakh Range--Geology)

BOGDANOV, N.A.

Investigating the self-diffusion of metals in the phase transformation range. Trudy Inst. met. no.15:138-146 '63. (MIRA 16:9)
(Diffusion) (Phase rule and equilibrium)

BOGDANOV, N. A.

"Toxicological Characteristics of Some Components of Rocket Fuels" - p. 80

Voyenno Meditsinskiy Zhurnal, No. 10, 1962

BOGDANOV, Nikita Alekseyevich; PUSHCHAROVSKIY, Yu.M., otv.red.; PEYVE, A.V., glavnyy red.; MARKOV, M.S., red.; MENNER, V.V., red.; TIMOFEYEV, P. P., red.; GALUSHKO, Ya.A., red.izd-va; RYLKINA, Yu.V., tekhn.red.; DOROKHINA, I.N., tekhn.red.

[Tectonic development of the Kolyma Massif and eastern Arctic in the Paleozoic.] Tektonicheskoe razvitie va paleozoe Kolymskogo massiva i Vostochnoi Arktiki. Moskva, 1963. 234 p. (Akademiia nauk SSSR. Geologicheskii institut. Trudy, no.99). (MIRA 17:2)

1. Chlen-korrespondent AN SSSR (for Peyve).

BOGDANOV, N.A.

Tectonic development in Japan and Sakhalin in the Paleozoic.
Izv. AN SSSR. Ser. geol. 30 no.6:51-63 Je '65.
(MIRA 18:6)

1. Geologicheskiy institut AN SSSR, Moskva.

BOGDANOV, N.A.; YERMAKOV, Ye.V.; IMANGULOV, R.G.; LIKHUSHIN, F.F.; SHELYAPIN, N.N.; STESHENKO, V F., red.

[Pathology, clinical aspects, and treatment in lesions from toxic chemical agents and radioactive substances] Patologiia, klinika i terapiia pri porazheniiakh OV i RV. Leningrad, Meditsina, 1964. 188 p. (MIRA 18:2)

BOGDANOV, N. A.

USSR/Metals - Stress
Metallography

Jan 50

"Problem of Investigating the Properties of Metals and Alloys at High Temperatures in Vacuo," Acad N. T. Gudtsov, M. G. Lozinskiy, I. F. Zudin, N. A. Bogdanov, M. P. Matveyeva, Inst of Metal imeni A. A. Baykov, Acad Sci USSR, 17 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 1

Completely describes apparatus (consisting of ordinary large glass bell jar, vacuum pump, and electrical connections) for studying in vacuo behavior of metal samples under tension and compression at high temperatures. Describes operating techniques. Meters and dials inside and outside the jaw show tensions applied to samples b lever arms, etc. Submitted 8 Jun 49.

PA 161T1C4

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1436 Otrazheniye betaizlucheniya i yego primeneniye dlya analiza splavov. M., 1954. 15 s. 22 sm. (M-vo vyssh. obrazovaniya SSSR. Mosk. ordena Trud. Krasnogo Znameni in-t stali im. I. V. Stalina). 100 ekz. Bespl. -(54-55091)

SO: Knizhnaya Letopis', Vol. 1, 1955

BOGDANOV, N. A.

"The Reflection of Beta Radiation and Its Application in the Analysis of Alloys." Cand Tech Sci, Moscow Order of Labor Red Banner Inst of Steel imeni I. V. Stalin, Min Higher Education USSR, Moscow, 1954. (KL, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

BOGDANOV, N.A., kandidat tekhnicheskikh nauk; REYTBLAT, V.L., inzhener; FUNKE, V.F., kandidat tekhnicheskikh nauk; ZHUKHOVITSKIY, A.A., professor, doktor khimicheskikh nauk.

Beta ray reflection and the analysis of metals. Sber. Inst.stali 34:283-305 '55. (MLRA 9:7)

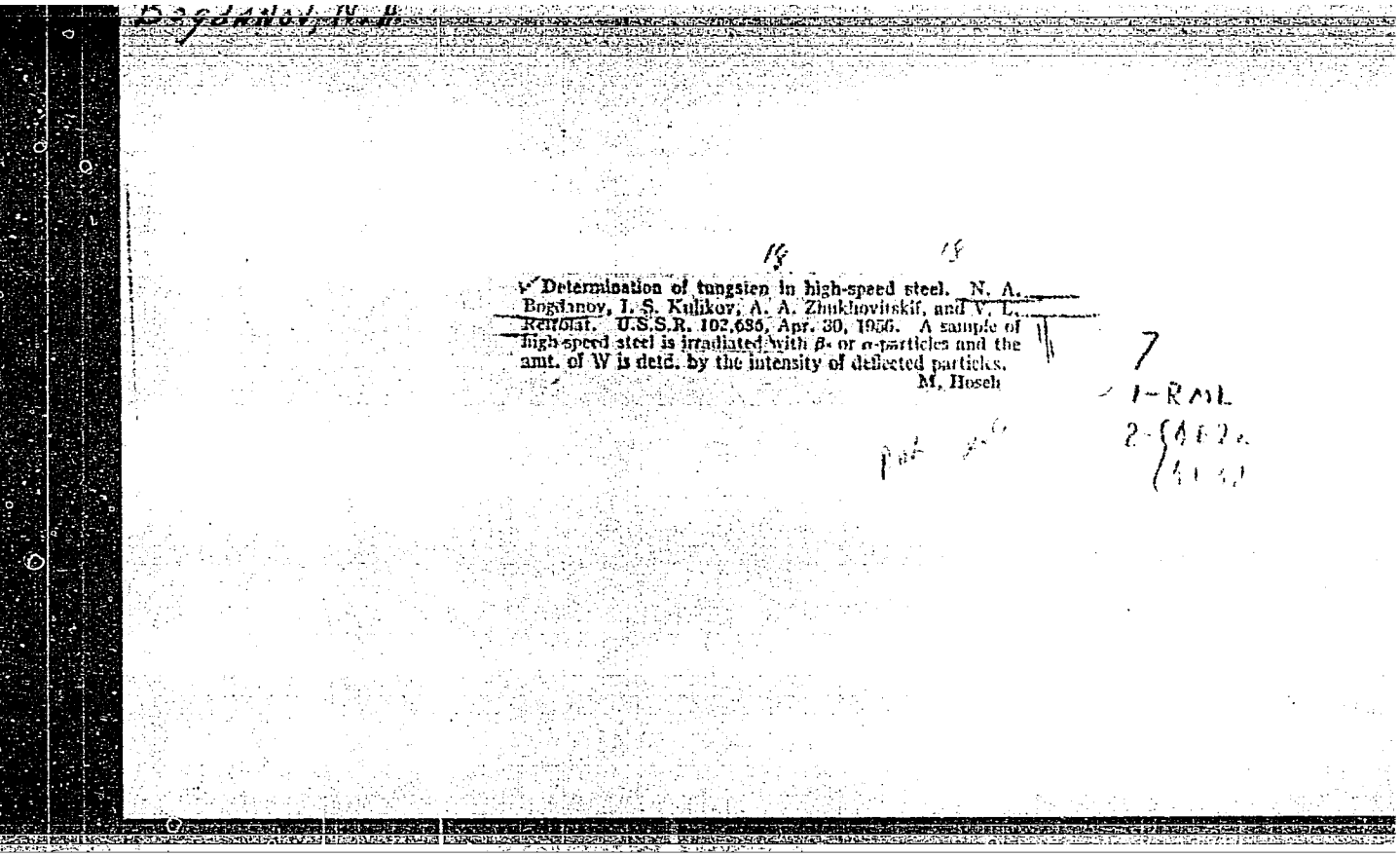
1.Kafedra fizicheskoy khimii i kafedra metallurgii redkikh metallov.
(Beta rays)

BOGDANOV, N. A.; ZHUKHOVITSKIY, A. A. (Prof., Dr. Chem. Sci.); REITBLATT, V. L. (Engr.); FUNKE, V. F.

"The Reflection of Beta Radiation and the Analysis of Metals," in book The Application of Radioisotopes in Metallurgy, Symposium XXXIV; Moscow; State Publishing House for Literature on Ferrous and Nonferrous Metallurgy, 1955;

Prof. A. A. ZHUKHOVITSKIY, Dr. Chem. Sci.; V. L. REITBLATT, Engr.; V. F. FUNKE, Assistant; N. A. BOGDANOV, Assistant/ Chair of Physical Chemistry; Chair of Rare Metals Metallurgy, Moscow Inst. of Steel im I. V. Stalin.

5041. **Analysis of chromium - niobium [and other] alloys by means of the intensity of reflection of β-radiation.** N. A. Bogdanov and V. F. Funke (*Zavod. Lab.*, 1953, [illegible]).—The sample of Nb - Cr alloy is placed on a Plexiglas diaphragm above a Geiger - Müller counter. Immediately below the sample is placed some radioactive ^{204}Tl on a lead support and a filter of aluminium foil, 90 mg per sq. cm, between this and the counter. The radiation reflected from the niobium atoms has a greater penetrating power through the filter than that from the chromium atoms. The samples for standards and for analysis are prepared from powders with a particle size of < 0·075 mm, which are first stirred in alcohol for 48 hr. A layer 5 mm thick is placed in a mould, 20 mm in diameter, covered with tissue paper and compressed under a pressure of 3 tons per sq. cm. Only the reflected radiation is received by the counter; the Pb holds back the direct radiation from the ^{204}Tl. The composition of the standards ranges from 6·39 to 100 per cent. of Nb. The intensity of the radiation varies linearly with the content of Nb, which is determined from a calibration curve. The accuracy is ± 2 per cent.; the method is suitable for alloys containing > 3 per cent. of Nb, and the time required is 3 min. With Fe - W alloys, samples prepared by sintering at 50° C below the m.p. give the same results for the content of W as those prepared by briquetting, and the same calibration curve can be used. Cast samples of Fe - W alloys also give the same results if they are heated first at 1000° C for 3 to 4 hr. The method is recommended for the analysis of other binary alloys, in which the atomic numbers of the components differ sufficiently. G. S. SMITH



Determination of tungsten in high-speed steel. N. A. Bogdanov, I. S. Kulikov, A. A. Zhukhovitskii, and V. L. Rentsiat. U.S.S.R. 102,636, Apr. 30, 1956. A sample of high-speed steel is irradiated with β^- or α-particles and the amt. of W is detd. by the intensity of deflected particles.
M. Hoseh

BoGDANOV, N. A.

PHASE I BOOK EXPLOITATION SOV/4557

Akademiya nauk SSSR. Institut metallurgii

Metallurgiya, metallovedeniye, fiziko-khimicheskiye metody issledovaniya (Physicochemical Research Methods in Metallurgy and Metal Science) Moscow, Izd-vo AN SSSR, 1960. 151 p. (Series: Its: Trudy, vyp. 6) 3,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A.A. Baykova.

General Ed.: I.P. Bardin, Academician (Deceased); Resp. Eds. for this Vol.: I.B. Borovskiy, Doctor of Physics and Mathematics, and K.P. Gurov, Candidate of Physics and Mathematics; Ed. of Publishing House: K.P. Gurov, Candidate of Physics and Mathematics; Tech. Ed.: O.M. Gus'kova.

PURPOSE: This collection of articles is intended for researchers in metallurgy and metal science and for scientists engaged in developing physicochemical methods of analysis.

Physicochemical Research Methods (Cont.) SOV/4557

COVERAGE: The collection contains 21 studies by members of the Laboratoriya fizicheskikh metodov issledovaniya (Laboratory of Physical Analysis Methods) of the Institut metallurgii imeni A.A. Baykova AN SSSR (Metallurgical Institute imeni A.A. Baykov, Academy of Sciences USSR), published in 1958-59. The articles are concerned with the experimental and theoretical study of physical characteristics of diluted solid solutions and compounds with special properties. The purpose of these studies is to establish the interrelation between the electronic structure of atoms and the structural characteristics of metallic compounds of systems. Some of the articles contain results obtained by applying new physical analysis methods, including the x-ray spectrum method (for analyzing the composition of microvolumes of alloys) and the microfocused x-ray spectroscopic method. Other articles describe the new RSASh-2 and RSASh-ZD apparatus used in the analysis. The first article, by I.B. Borovskiy, deals with the accomplishments and trends of Soviet research in metal science and metallurgy. References accompany each article. Also included is a bibliography containing 385 works by members of the Metallurgical Institute imeni A.A. Baykov. This bibliography was first published in 1956.

Physicochemical Research Methods (Cont.) SOV/4557

Physicochemical Research Methods (Cont.) SOV/4557

AVAILABLE: Library of Congress

Card 6/6

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E193/E383

5.2.100

AUTHOR: Bogdanov, N.A. (Moscow)

TITLE: Investigation of Self-diffusion[18] in Cast Iodide Chromium[27]

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, Nr 3, pp 99 - 103 (USSR)

ABSTRACT: Self-diffusion in high purity (99.87%, for full analysis see the table on p 99) chromium made by the iodide process was studied by means of the radioactive tracer (Cr^{51}) technique. The diffusion treatment was carried out in vacuum at 1 080, 1 180 and 1 320 °C for 48, 12 and 6 h, respectively. The values of the self-diffusion coefficient D (10^{-2} cm^2/sec) at various temperatures are given in Table 1. The temperature dependence of D was found to be $D = 1.65 \times 10^{-3} \exp(-62400/RT)$, which means that the activation energy for self-diffusion in chromium is Q = 62400 cal/g-atom. There are 3 figures, 2 tables and 8 references, 5 of which are Soviet, 2 English and 1 German.

SUBMITTED: November 27, 1959

Card 1/1

BOGDANOV, N.A. (Moskva)

Effect of the rate of heating on the self-diffusion in iron. Izv. AN SSSR. Otd. tekh. nauk Met. i topl. no.2:98-103 Mr-Ap '62. (MIRA 15:4)

(Activity coefficients) (Diffusion)

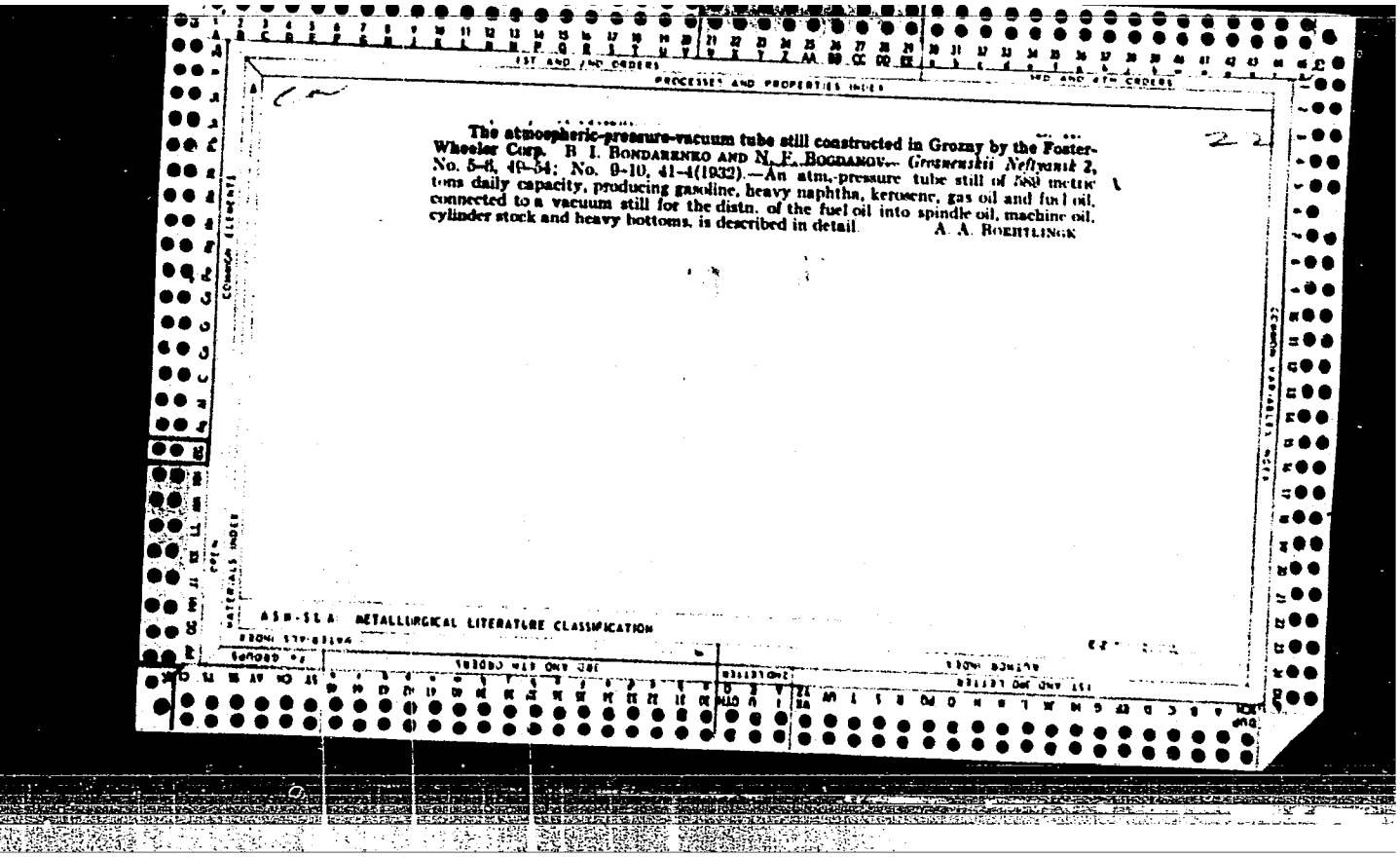
BOGDANOV, N.B.; VOINOV, A.S.; NEGRUTSA, V.Z.; SUDOVIKOV, N.G.

A great researcher; in memory of Leonid IAkovlevich Kharitonov, d.1964. Vest.LGU 20 no.12:147-148 '65.

(MIRA 18:3)

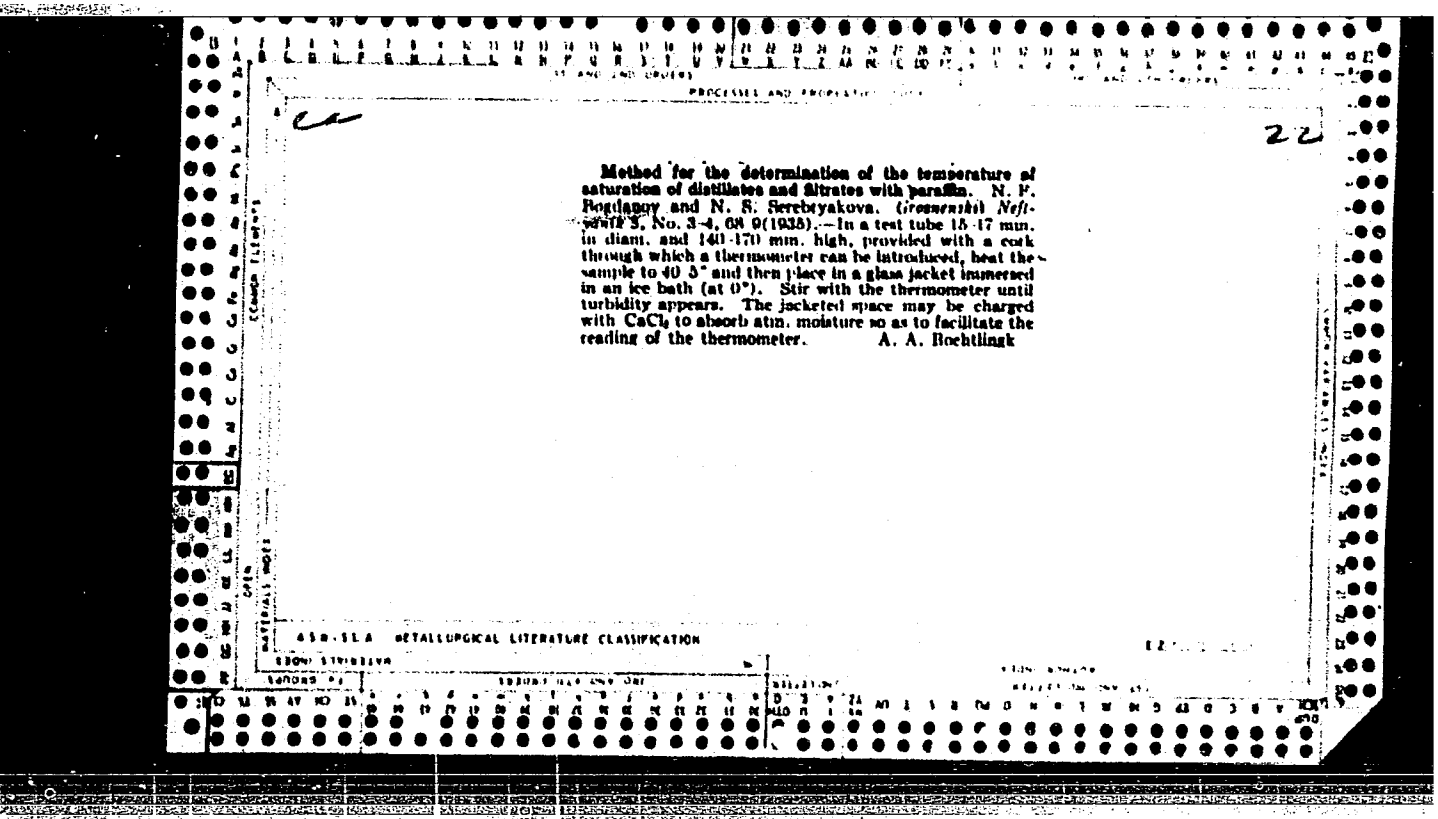
BOGDANOV, N.F.

Formation of vegetative fruits on trees. Priroda 46 no.1:127 Ja '57.
(Fruit trees) (MLRA 10:2)

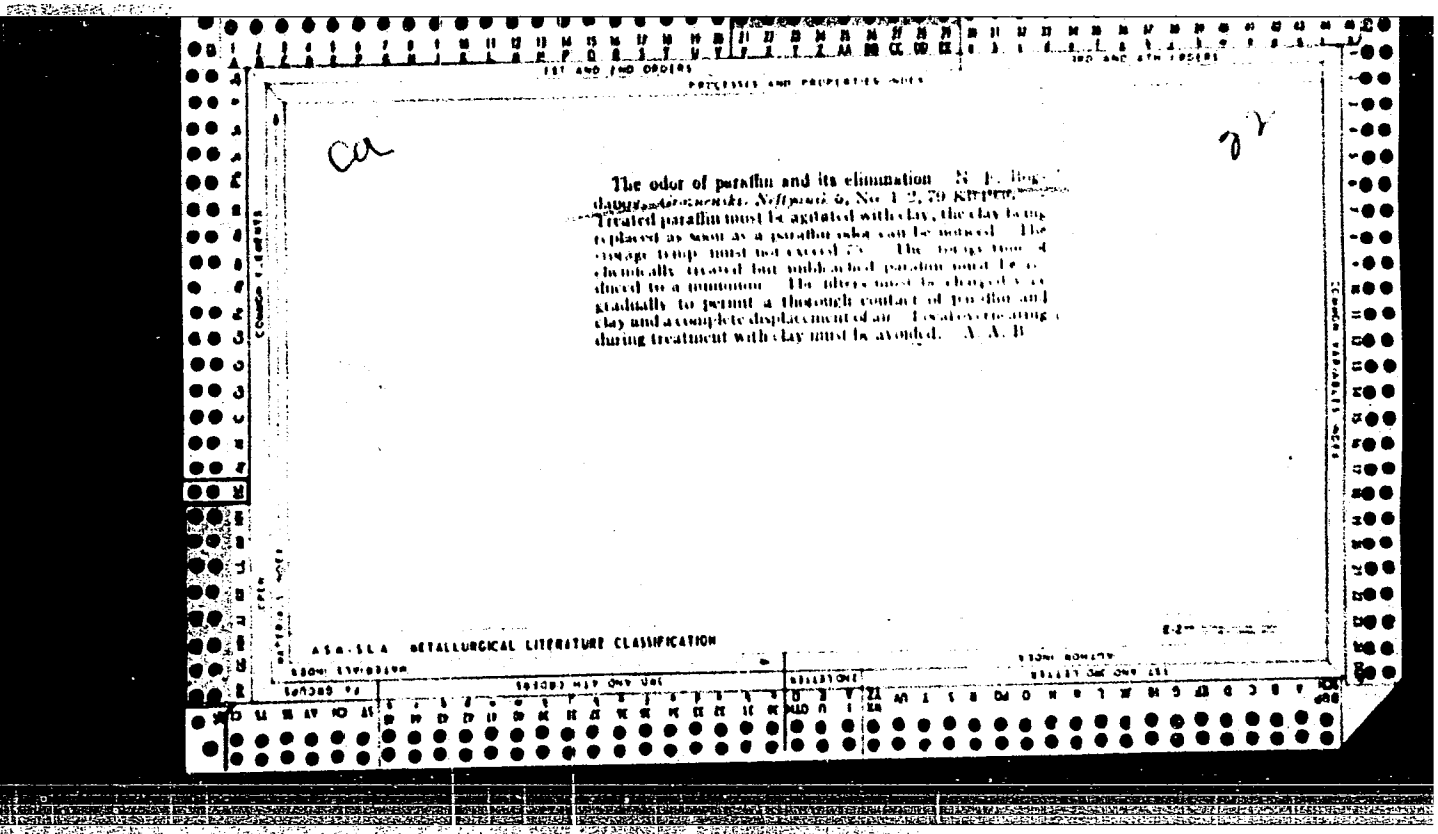


The atmospheric-pressure-vacuum tube still constructed in Grozny by the Foster-Wheeler Corp. B. I. BONDARENKO AND N. E. BOGDANOV. *Groznenskii Neftyanik* 2, No. 5–6, 49–54; No. 9–10, 41–4(1932).—An atm.-pressure tube still of 580 metric tons daily capacity, producing gasoline, heavy naphtha, kerosene, gas oil and fuel oil, connected to a vacuum still for the distn. of the fuel oil into spindle oil, machine oil, cylinder stock and heavy bottoms, is described in detail. A. A. BOEHTLINGK

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

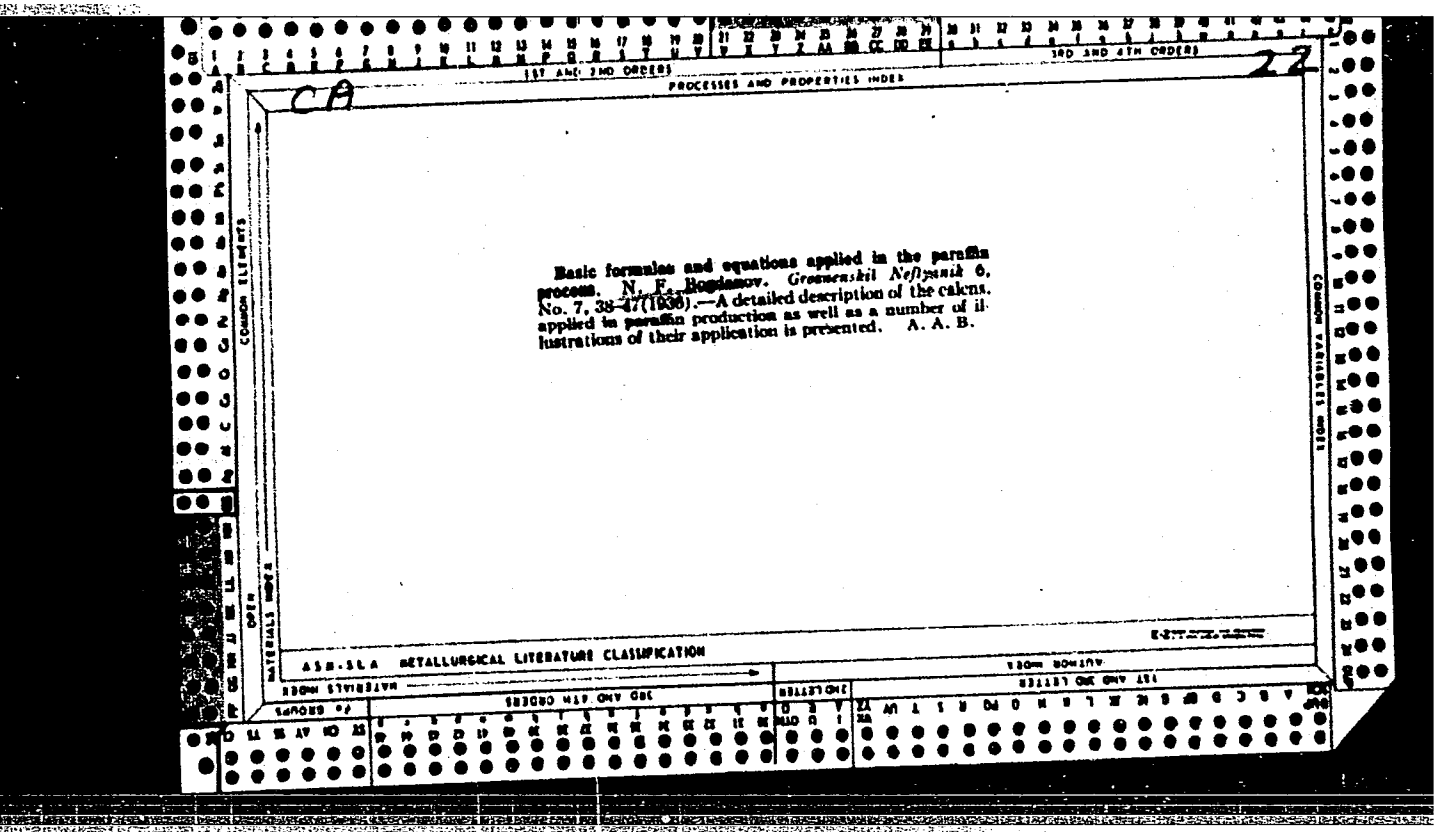


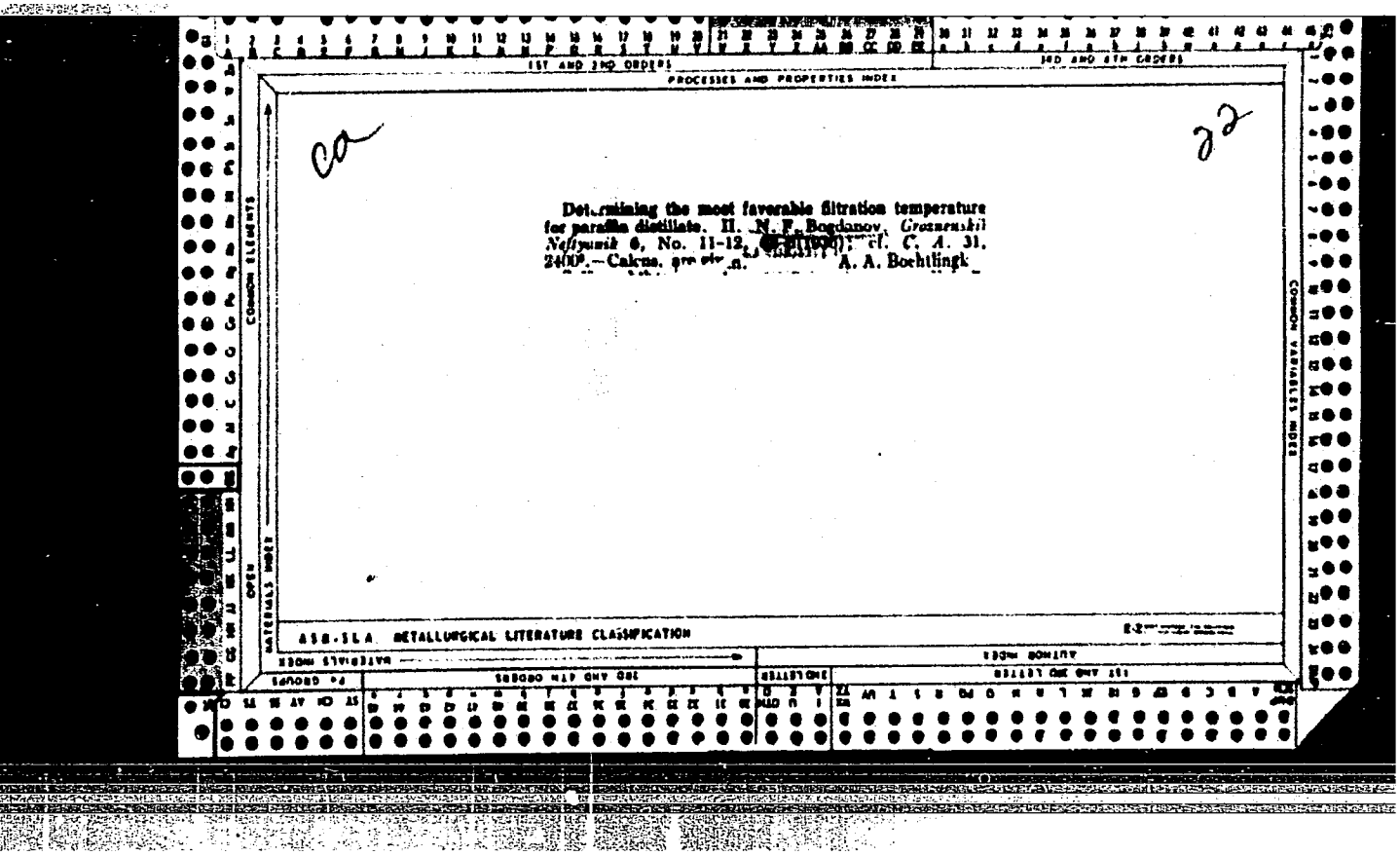
Method for the determination of the temperature of saturation of distillates and filtrates with paraffin. N. F. Bogdanov and N. S. Serebryakova. (*Gresenshti*) *Neftyanoe* 3, No. 3-4, 68-9(1938).—In a test tube 15-17 mm. in diam. and 140-170 mm. high, provided with a cork through which a thermometer can be introduced, heat the sample to 40-5° and then place in a glass jacket immersed in an ice bath (at 0°). Stir with the thermometer until turbidity appears. The jacketed space may be charged with $CaCl_2$ to absorb atm. moisture so as to facilitate the reading of the thermometer. A. A. Boehtlingk

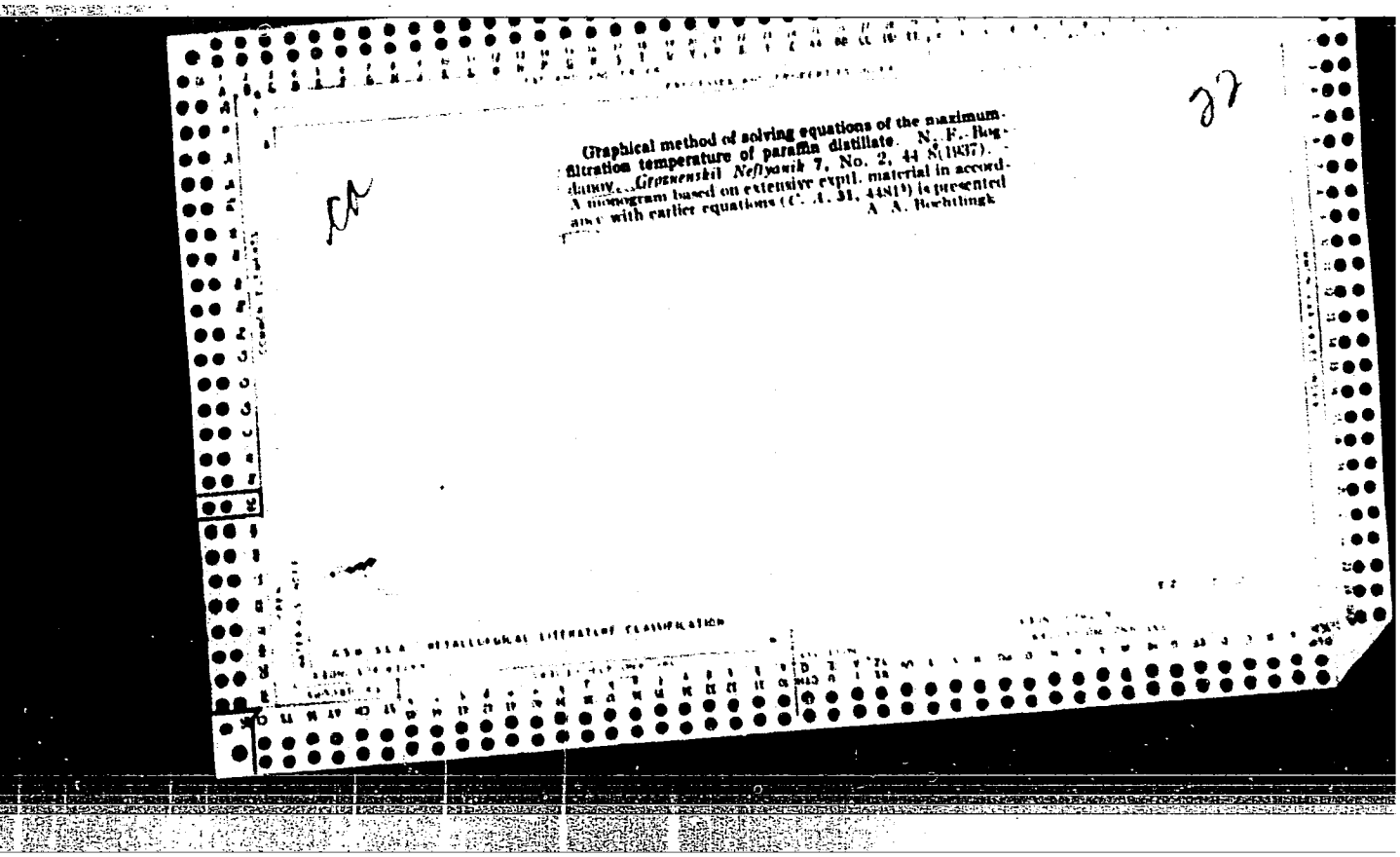


The odor of paraffin and its elimination [illegible]. Treated paraffin must be agitated with clay, the clay being replaced as soon as a paraffin odor can be noticed. The [illegible] must not exceed [illegible]. The [illegible] chemically treated but unbleached paraffin must be reduced to a minimum. The [illegible] gradually to permit a thorough contact of paraffin and clay and a complete displacement of air. [illegible] during treatment with clay must be avoided. A. A. B.

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION







Graphical method of solving equations of the maximum-filtration temperature of paraffin distillate. N. F. Bog-danov. *Groznenskii Neftyanik* 7, No. 2, 44 S(1937). A nomogram based on extensive exptl. material in accord-ance with earlier equations (C. A. 31, 44819) is presented.
A. A. Berlinger